ADDITIONAL

Service Manual

PIONEER
The future of sound and vision.

ORDER NO.
ARP1535

MULTI – PLAY COMPACT DISC PLAYER

PD-M500

HEM, HB, SD, SD/G, HP

PD-M400 HEM, SD, HP

- Refer to the service manual ARP1520, PD–M500/KU, KC, PD–M400/KU and KC types.

- This manual is applicable to the PD–M500/HEM, HB, SD, SD/G, HP, PD–M400/HEM, SD and HP types.

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1. PD-M500/HEM, HB, SD, SD/G AND HP TYPES

NOTES :
- Parts without part number cannot be supplied.
- Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).
- 560 Ω → 56 × 10¹ → 561 ..... RD1/4PS 5 6 1 J
- 47k Ω → 47 × 10³ → 473 ..... RD1/4PS 4 7 3 J
- 0.5 Ω → 0R5 ..... RN2H 0 R 5 K
- 1 Ω → 010 ..... RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
- 5.62k Ω → 562 × 10¹ → 5621 ..... RN1/4SR 5 6 2 1 F

1.1 CONTRAST OF MISCELLANEOUS PARTS

The PD-M500/HEM, HB, SD, SD/G and HP types are the same as the PD-M500/KU type with the exception of the following sections.

Mark	Symbol & Description	Part No.						Remarks
		KU type	HEM type	HB type	SD type	SD/G type	HP type	
⚠ ◉	Main board assembly	PWZ1393	PWZ1396	PWZ1396	PWZ1396	PWZ1396	PWZ1396	
	Headphone board assembly	• • • •	Non supply	Non supply	Non supply	Non supply	Non supply	
⚠ ★	Power transformer (AC120V)	PTT1058	• • • •	• • • •	• • • •	• • • •	• • • •	
⚠ ★	Power transformer (AC220/240V)	• • • •	PTT1059	PTT1059	• • • •	• • • •	PTT1059	
⚠ ★	Power transformer (AC110/120 – 127/220/240V)	• • • •	• • • •	• • • •	PTT1060	PTT1060	• • • •	
⚠	Strain relief	CM-22C	CM-22B	CM-22B	CM-22B	CM-22B	CM-22B	
	Phono name plate	PAM1203	PAM1188	PAM1188	PAM1188	PAM1188	PAM1188	
	FL filter	PAM1234	PAM1235	PAM1235	PAM1234	PAM1234	PAM1235	
⚠	AC power cord	PDG1002 (PDG1015)	PDG1003	PDG1004	PDG1013	PDG1013	PDG1006	
	CD packing case	PHG1177	PHG1187	PHG1187	PHG1187	PHG1231	PHG1187	For packing
	Front panel	PNW1383	PNW1361	PNW1361	PNW1361	PNW1361	PNW1361	
	Headphone knob	• • • •	PAC1208	PAC1208	PAC1208	PAC1208	PAC1208	
	Headphone angle	• • • •	Non supply	Non supply	Non supply	Non supply	Non supply	
	Operating instructions (English)	PRB1047	• • • •	PRB1047	PRB1047	PRB1047	PRB1047	
	Operating instructions (English/French)	• • • •	PRE1067	• • • •	• • • •	• • • •	• • • •	
	Operating instructions (Spanish)	• • • •	• • • •	• • • •	PRC1005	• • • •	• • • •	
	Operating instructions (German/Italian/Dutch/ Spanish/Swedish /Portuguese)	• • • •	PRF1008	• • • •	• • • •	• • • •	• • • •	
	Single magazine assembly	PXA1043	• • • •	• • • •	• • • •	• • • •	• • • •	
⚠	Lead wire unit	PDF1035	PDF1035	PDF1035	PDF1042	PDF1042	PDF1035	
⚠★★	S102 Voltage selector (AC110/120 – 127/220/240V)	• • • •	• • • •	• • • •	PSB1002	PSB1002	• • • •	

MAIN Board Assembly (PWZ1396)

The main board assemby (PWZ1396) is the same as the main board assembly (PWZ1393) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		PWZ1393	PWZ1396	
⚠★★	IC30 – IC32	• • • • •	ICP-N10	
	R89,R90	• • • • •	RD1/6PM511J	
	R91,R92	• • • • •	RD1/6PM223J	
	R105,R106	RD1/6PM102J	RD1/6PM511J	

Headphone Board Assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★★	IC501	M5218L

CAPACITORS

Mark	Symbol & Description	Part No.
	C501,C502	CEAS330M16
	C503 – C505	CKCYF103Z50
	C506,C507	CQMA104K50

RESISTORS

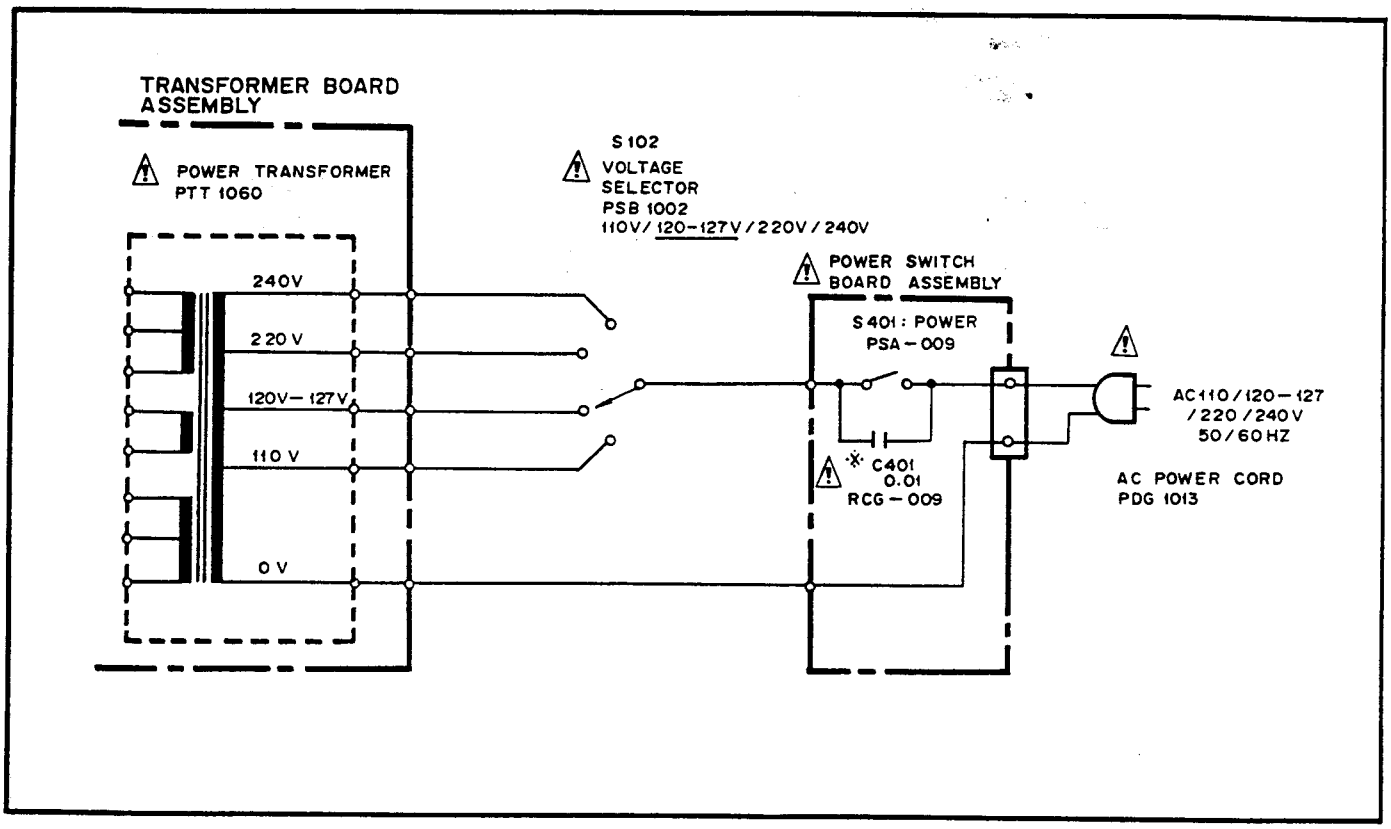
Mark	Symbol & Description	Part No.
	VR501 Variable resistor (20kΩ) (LEVEL)	PCS1001
	Other resistors	RD1/6PM□□□J

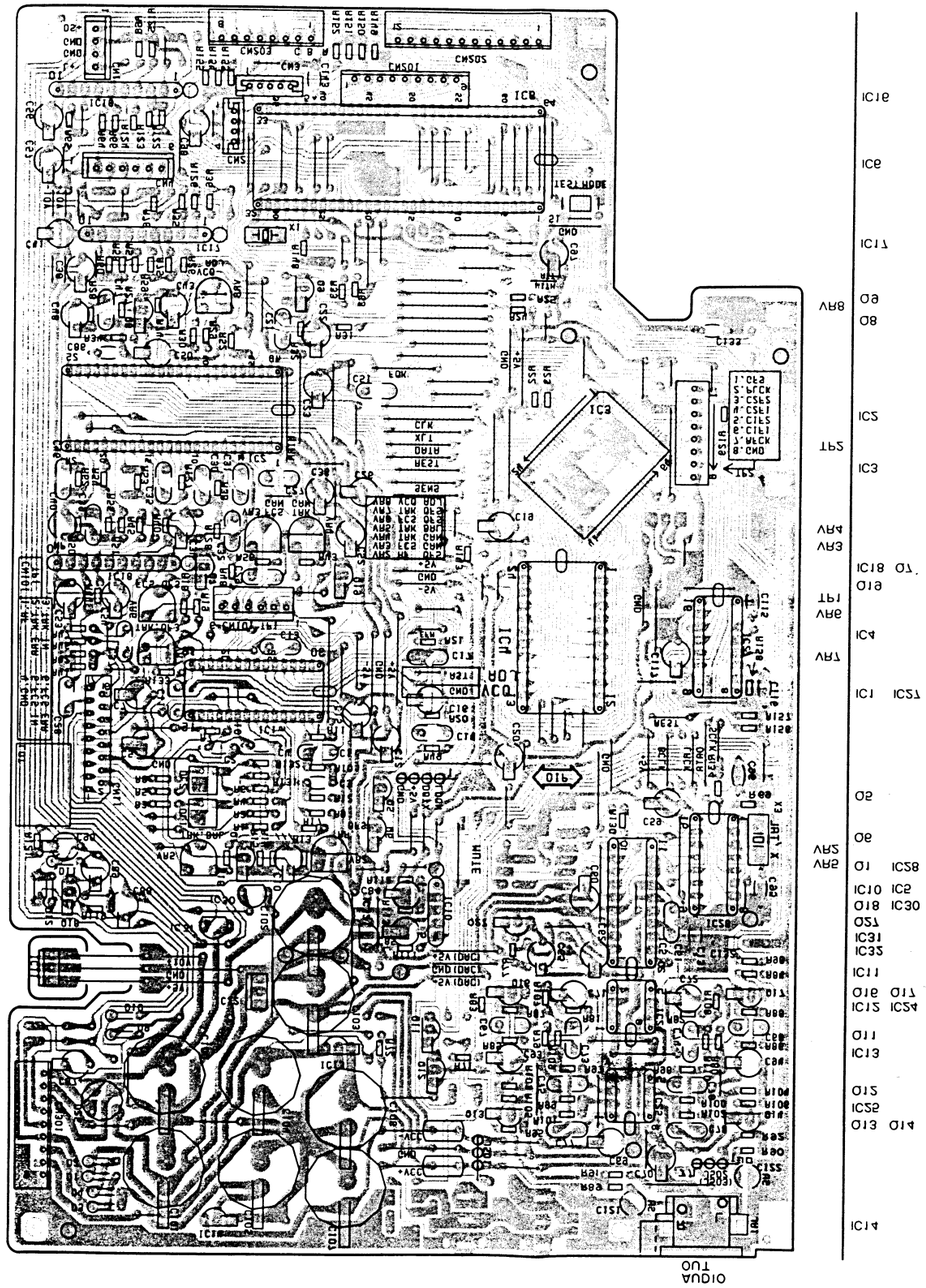
OTHERS

Mark	Symbol & Description	Part No.
	JA501 Jack (PHONES)	PKN1001

1.2 FOR PD-M500/SD and SD/G types

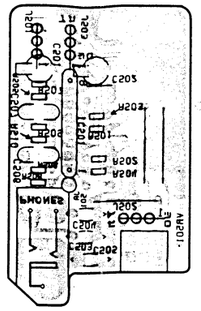
Note :The schematic diagram of PD-M500/SD and SD/G types are the same as the PD-M500/HEM, HB and HP types with the exception of the power supply section. Refer to the schematic diagram of PD-M500/HEM, HB and HP types.(see page 11.)



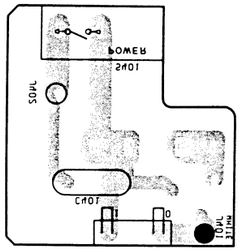


MAIN BOARD ASSEMBLY (PWZ1398)

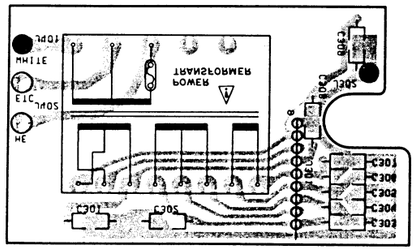
HEADPHONE BOARD ASSEMBLY

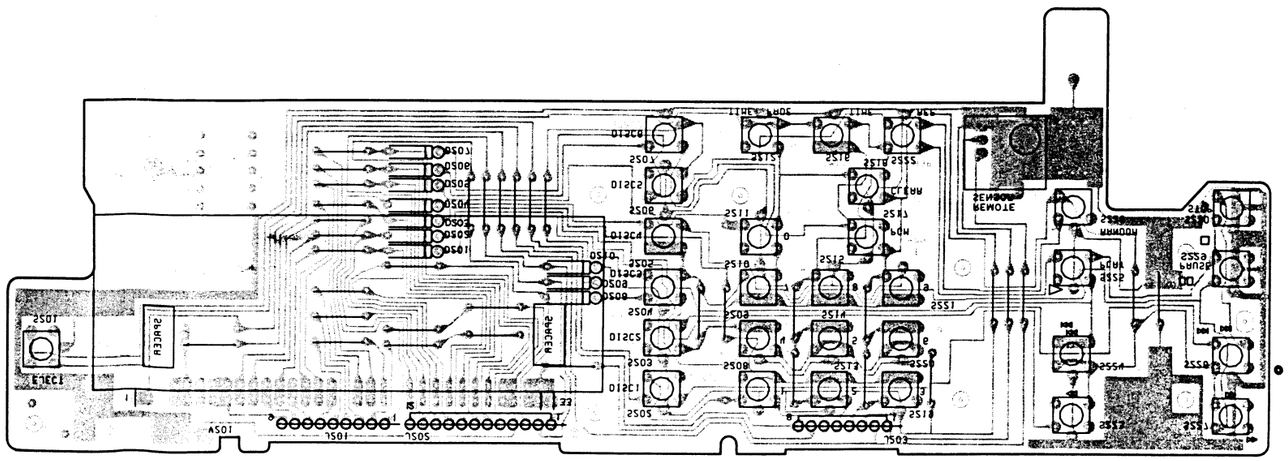


POWER SWITCH BOARD ASSEMBLY



TRANSFORMER BOARD ASSEMBLY

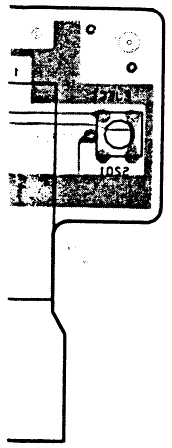




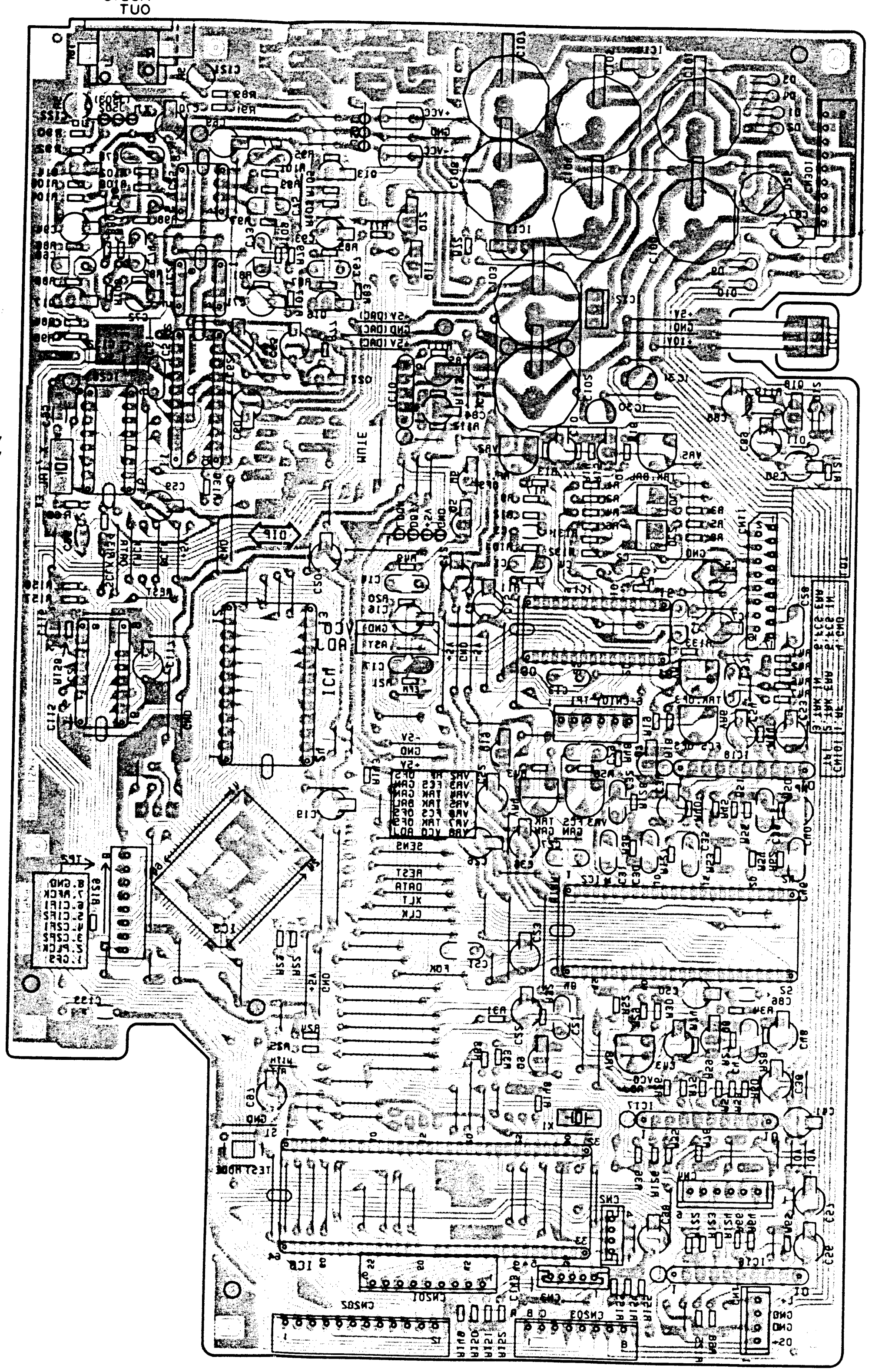
FUNCTION BOARD ASSEMBLY (PWZ1405)

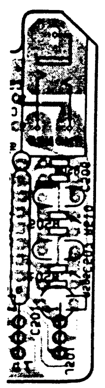
6 5 4 3 2

FUNCTI



MAIN BOARD ASSEMBLY (PWZ1396)





HEADPHO

This P.C.B. connection diagram is viewed from the foil side.

A

B

C

D

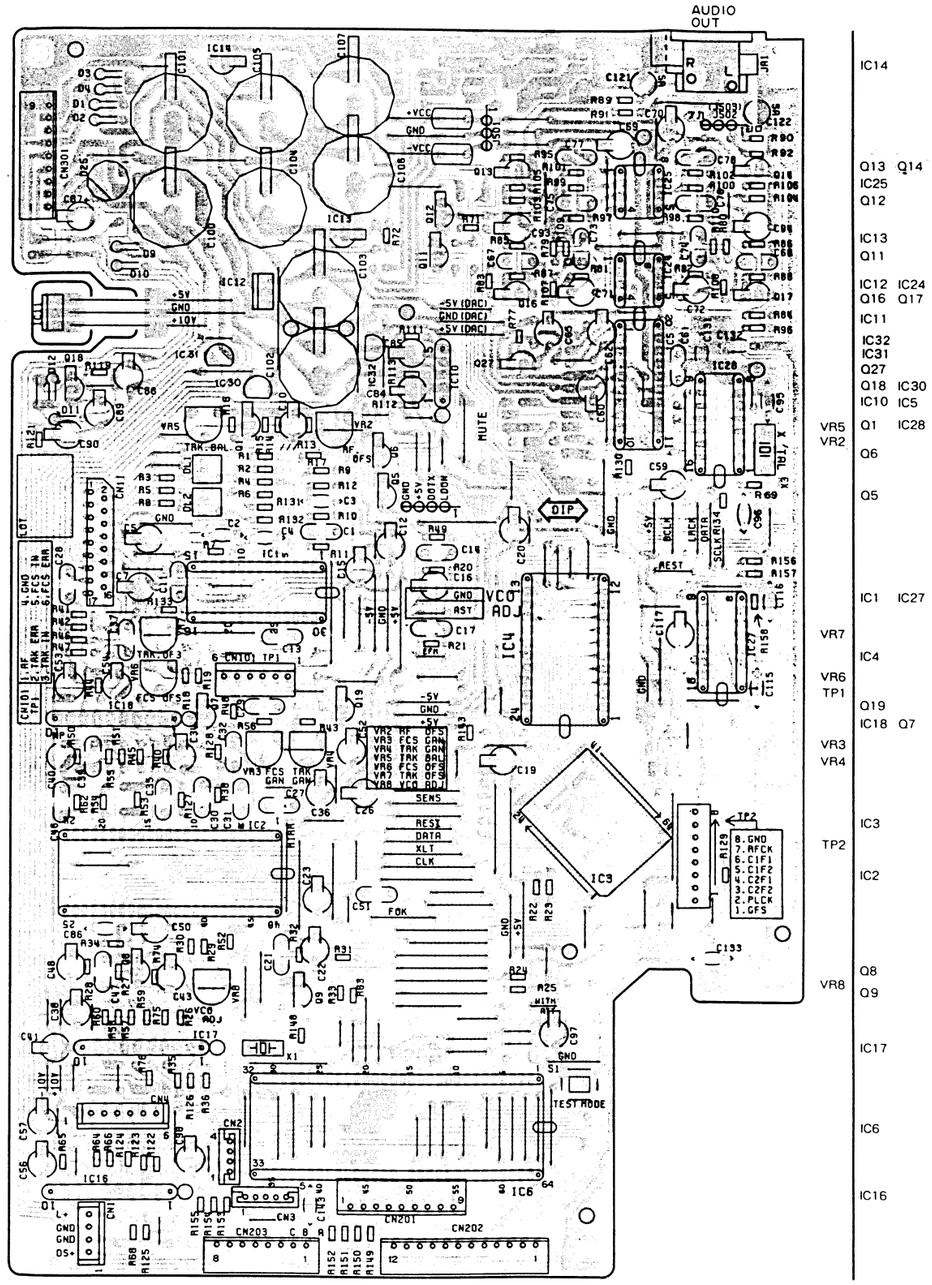
6 5 4 3 2 1

1.3 P.C. BOARDS PATTERN

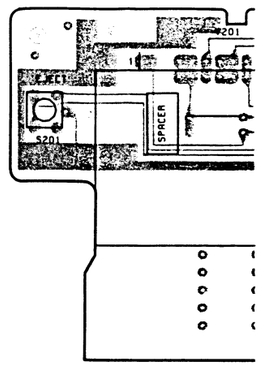
P.C.B. pattern diagram indication	Corresponding part symbol	Part name	P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor			Ceramic capacitor
					Mylar capacitor
		FET	SR		Styrol capacitor
			SF		
		Diode	NP		Electrolytic capacitor (Non polarized)
			NL		Electrolytic capacitor (Noiseless)
		Zenner diode			Electrolytic capacitor (Polarized)
		LED			Electrolytic capacitor (Polarized)
		Varactor			Power capacitor
		Tact switch			Semi-fixed resistor
		Inductor			Resistor array
					Resistor
		Coil			
		Transformer			Resonator
		Filter			

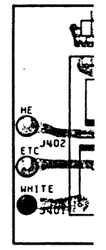
1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

MAIN BOARD ASSEMBLY (PWZ1396)

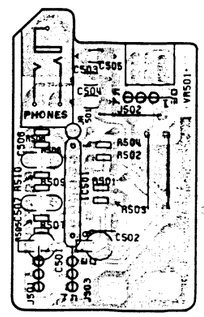


FUNCTION BOARD



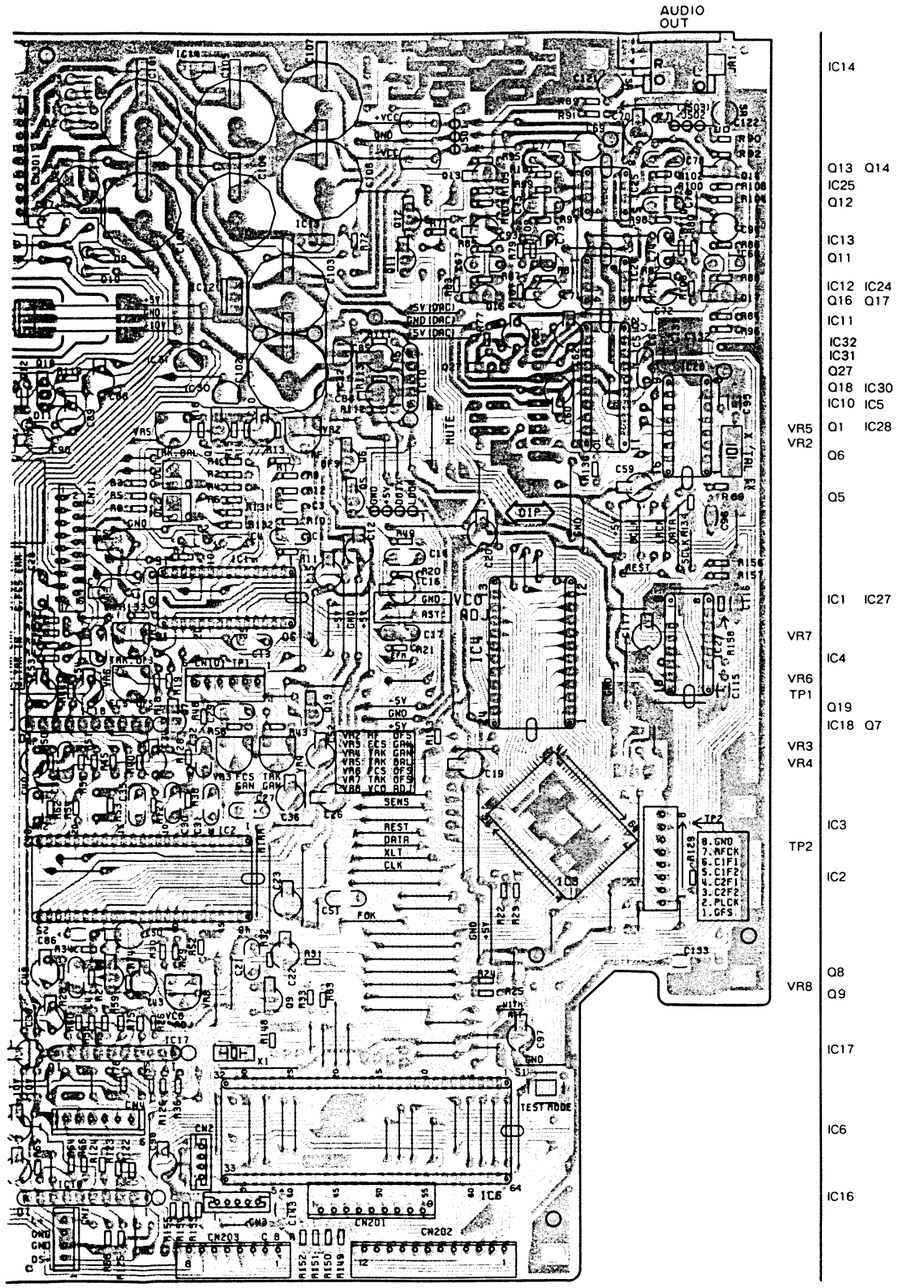


TRANS

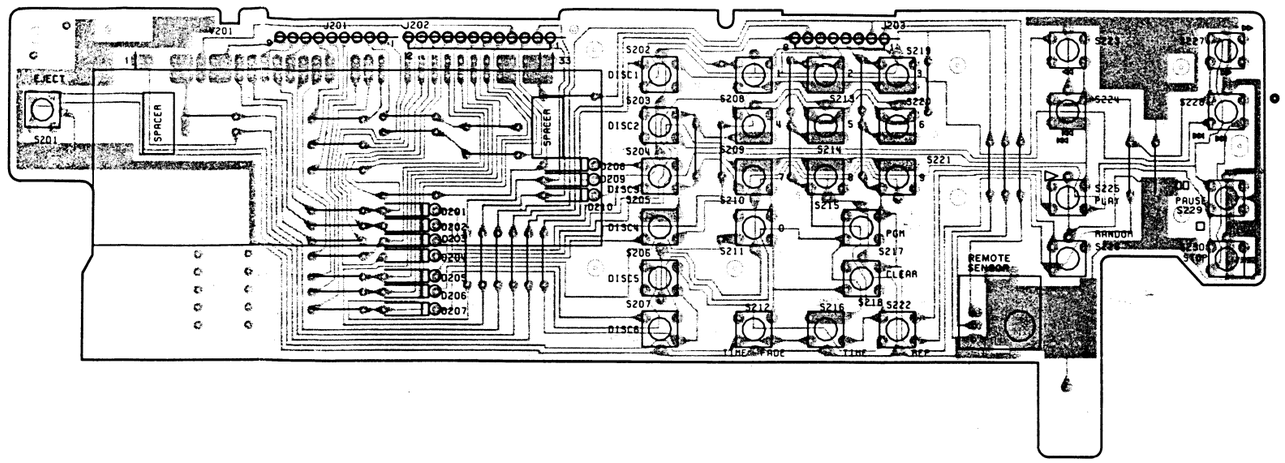


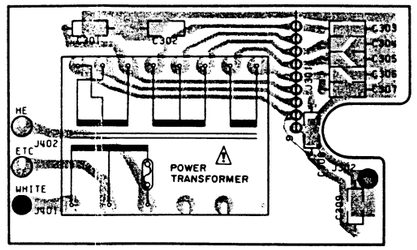
HEADPHONE BOARD

BOARD ASSEMBLY (PWZ1396)

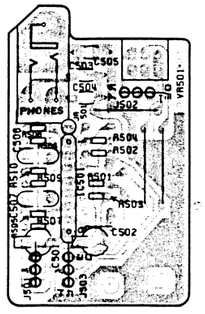


FUNCTION BOARD ASSEMBLY (PWZ1402)

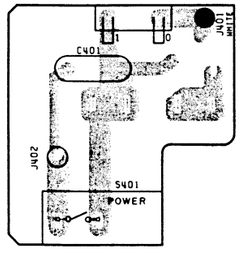




TRANSFORMER BOARD ASSEMBLY

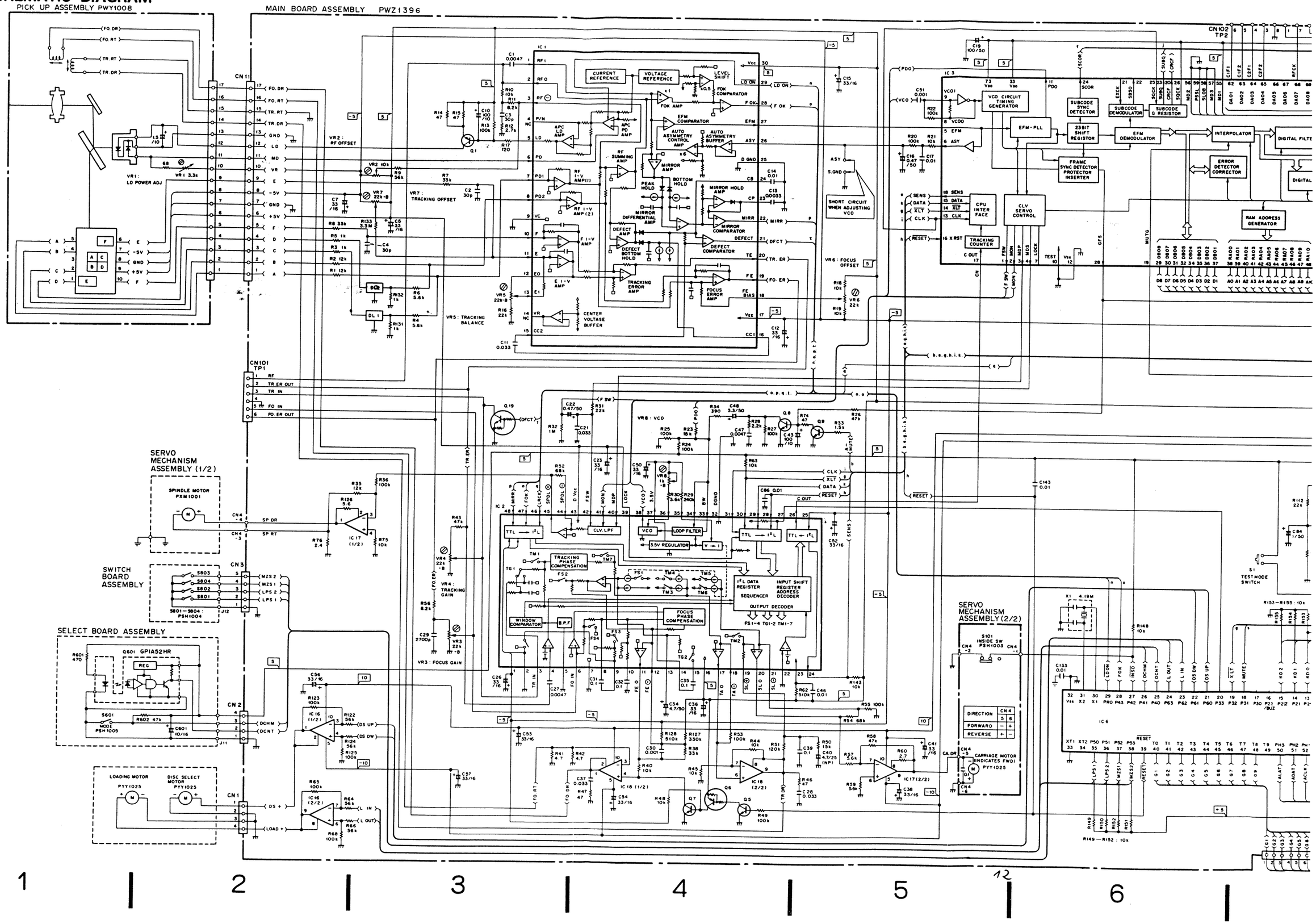


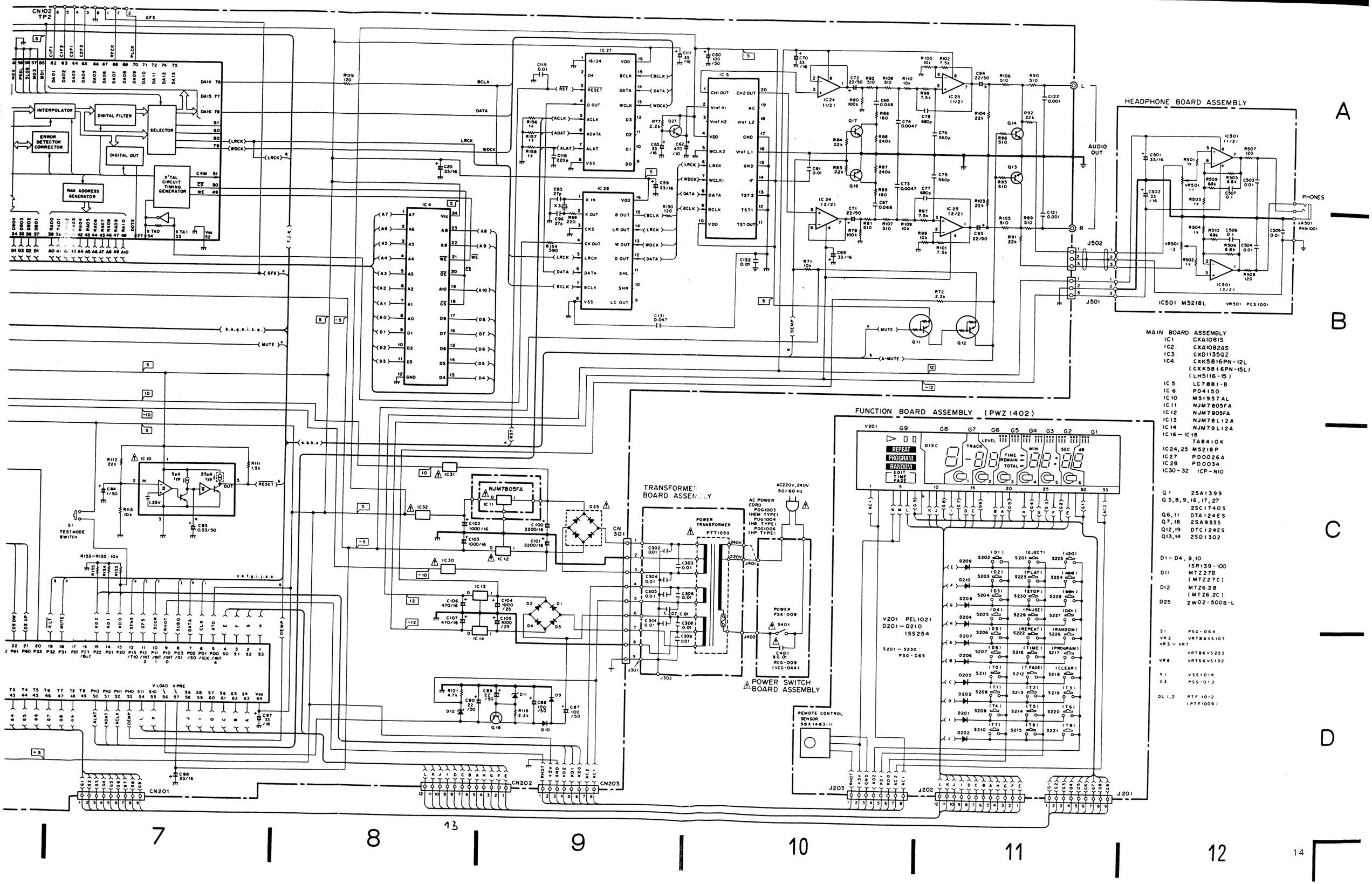
HEADPHONE BOARD ASSEMBLY



⚠POWER SWITCH BOARD ASSEMBLY

1.4 SCHEMATIC DIAGRAM




CN102
TP2
GFS
INTERPOLATOR
DIGITAL FILTER
SELECTOR
ERROR DETECTOR CORRECTOR
DIGITAL OUT
RAM ADDRESS GENERATOR
X'TAL CIRCUIT TIMING GENERATOR
BCLK
DATA
LRCK
WDCK
IC 27
IC 28
IC 5
IC 4
IC 24 (1/2)
IC 25 (1/2)
IC 24 (2/2)
IC 25 (2/2)
AUDIO OUT
L
R
J502
J501
HEADPHONE BOARD ASSEMBLY
IC501 M5218L
VR501 PCS1001
PHONES
JA501 RKN1001
MAIN BOARD ASSEMBLY
IC1 CXA1081S
IC2 CXA1082AS
IC3 CXD1135QZ
IC4 CXK5816PN-12L
(CXK5816PN-15L)
(LH5116-15)
IC5 LC7881-B
IC6 PD4150
IC10 M51957AL
IC11 NJM7805FA
IC12 NJM7905FA
IC13 NJM78L12A
IC14 NJM79L12A
IC16 – IC18 TA8410K
IC24,25 M5218P
IC27 PD0026A
IC28 PD0034
IC30-32 ICP-N10
Q1 2SA1399
Q5,8,9,16,17,27 2SC1740S
Q6,11 DTA124ES
Q7,18 2SA933S
Q12,19 DTC124ES
Q13,14 2SD1302
D1-D4,9,10 1SR139-100
D11 MTZ27B (MTZ27C)
D12 MTZ6.2B (MTZ6.2C)
D25 2W02-5008-L
S1 PSG-064
VR2 VRT86VS103
VR3 – VR7 VRT86VS223
VR8 VRT56VS102
X1 VSS1014
X3 PSS-012
DL1,2 PTF1012 (PTF1009)
TRANSFORMER BOARD ASSEMBLY
POWER TRANSFORMER PTT1059
AC POWER CORD PDG1003 (HEM TYPE) PDG1004 (HB TYPE) PDG1006 (HP TYPE)
AC220V, 240V 50/60 Hz
POWER PSA-009
POWER SWITCH BOARD ASSEMBLY
FUNCTION BOARD ASSEMBLY (PWZ1402)
REMOTE CONTROL SENSOR SBX1483-11
V201 PEL1021
D201 – D210 1SS254
S201 – S230 : PSG-065
CN201
CN202
CN203
CN301
J201
J202
J203
J301
J302
J401
J402
IC 10
IC 11
IC 12
IC 13
IC 14
IC30
IC31
IC32
NJM7805FA
S1 TESTMODE SWITCH
S401
C401 30.01 RCG-009 (VCG-044)

1. RESISTORS :
Indicated in Ω, 1/4W, 1/6W and 1/8W, ± 5 % tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) ; ± 1 %, (G) ; ± 2 %, (K) ; ± 10 %, (M) ; ± 20 % tolerance.

2. CAPACITORS :
Indicated in capacity (μF) /voltage (V) unless otherwise noted p ; pF. Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT :
▭ ; DC voltage (V) at no input signal.

4. OTHERS :
➡ ; Signal route.
⊘ ; Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHES : (The underlined indicates the switch position)
OUTSIDE OF P.C.BOARD ASSEMBLY
S101 : INSIDE ON – OFF
MAIN BOARD ASSEMBLY
S1 : TEST MODE ON – OFF
FUNCTION BOARD ASSEMBLY
S201 : EJECT
S202 : 1
S203 : 2
S204 : 3 (DISC NO.)
S205 : 4
S206 : 5
S207 : 6
S208 : 1
S209 : 4 (TRACK NO.)
S210 : 7
S211 : 0
S212 : TIME FADE
S213 : 2
S214 : 5 (TRACK NO.)
S215 : 8
S216 : TIME
S217 : PGM MEMORY
S218 : CLEAR
S219 : 3
S220 : 6 (TRACK NO.)
S221 : 9
S222 : REPEAT
S223 : MANUAL SEARCH (◀◀)
S224 : TRACK SEARCH (|◀◀)
S225 : PLAY
S226 : RANDOM PLAY
S227 : MANUAL SEARCH (▶▶)
S228 : TRACK SEARCH (▶▶|)
S229 : PAUSE
S230 : STOP

SWITCH BOARD ASSEMBLY
S801 : LPS1 LOADING POSITION
S802 : LPS2

	STOP	DURING THE LOADING	CLAMP CONDITION PLAY	DURING THE EJECT
S801	ON (H)	OFF (L)	OFF (L)	ON (H)
S802	ON (H)	ON (H)	OFF (L)	OFF (L)

S803 : MZS2 MAGAZINE
S804 : MZS1

	NO MAGAZINE	SIX MAGAZINES	SINGLE
S803	ON (H)	OFF (L)	OFF (L)
S804	OFF (L)	ON (H)	OFF (L)

Line Voltage Selection
(For HEM, HB and HP types)
Line voltage can be changed with following steps.
1. Disconnect the AC Power cord.
2. Remove the Bonnet case.
3. Change the connection of the primary lead wires. (Connect as shown in Schematic Diagram)
4. Stick the line voltage label on the rear panel.

Description	Part No.
220V label	AAX-193
240V label	AAX-192

2. FOR PD−M400/HEM, SD AND HP TYPES

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω → 56 × 10¹ → 561 ..... RD1/4PS 5 6 1 J
47k Ω → 47 × 10³ → 473 ..... RD1/4PS 4 7 3 J
0.5 Ω → 0R5 ..... RN2H 0 R 5 K
1 Ω → 010 ..... RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10¹ → 5621 ..... RN1/4SR 5 6 2 1 F

2.1 Contrast of Miscellaneous Parts

The PD−M400/HEM, SD and HP types are the same as the PD−M500/KU type with the exception of the following sections.

Mark	Symbol & Description	Part No.				Remarks
		PD−M500 /KU type	PD−M400 /HEM type	PD−M400 /SD type	PD−M400 /HP type	
⚠ ◉	Main board assembly	PWZ1393	PWZ1398	PWZ1397	PWZ1397	
◉	Function board assembly	PWZ1402	PWZ1408	PWZ1408	PWZ1408	
	Transformer board assemlby	Non supply	Non supply	Non supply	Non supply	
⚠ ★	Power transformer (AC120V)	PTT1058	• • • •	• • • •	• • • •	
⚠ ★	(AC220/240V)	• • • •	PTT1069	• • • •	PTT1069	
⚠ ★	(AC110/120 − 127/220/240V)	• • • •	• • • •	PTT1070		
⚠	Strain relief	CM-22C	CM-22B	CM-22B	CM-22B	
	Track button	PAC1261	• • • •	• • • •	• • • •	
	Program button	• • • •	PAC1263	PAC1263	PAC1263	
	Window	PAM1182	PAM1202	PAM1183	PAM1183	
	FL filter	PAM1234	PAM1237	PAM1236	PAM1236	
⚠	AC power cord	PDG1002	PDG1008	RDG1003	PDG1011	
	CD packing case	PHG1177	PHG1189	PHG1189	PHG1189	For packing
	Operating instructions (English)	PRB1047	• • • •	PRB1048	PRB1048	
	Operating instructions (English/French)	• • • •	PRE1068	• • • •	• • • •	
	Operating instructions (Spanish)	• • • •	• • • •	PRC1005	• • • •	
	Operating instructions (German/Italian/Dutch/ Spanish/Swedish/Portuguese)	• • • •	PRF1009	• • • •	• • • •	
	Phono name plate	PAM1203	PAM1189	PAM1189	PAM1189	
	Connection cord with miniplug	• • • •	PDE-319	PDE-319	PDE-319	
	Stopper	PNM1018	• • • •	• • • •	• • • •	
	Leg (A)	PNW1326	• • • •	• • • •	• • • •	
	Front panel	PNW1383	PNW1362	PNW1362	PNW1362	
	Remote control unit	PWW1021	• • • •	• • • •	• • • •	
	Single magazine assembly	PXA1043	• • • •	• • • •	• • • •	
	Leg	• • • •	REC-434	REC-434	REC-434	
	Screw	PMZ30P060FCU	PMZ30P060FMC	PMZ30P060FMC	PMZ30P060FMC	For power switch
	Lead wire unit	PDF1035	PDF1035	PDF1042	PDF1035	
⚠★★	S102 Voltage selector (AC110/120 − 127/220/240V)	• • • •	• • • •	PSB1002	• • • •	

MAIN Board Assembly (PWZ1397 and PWZ1398)

The main board assembly (PWZ1397) and (PWZ1398) are the same as the main board assembl (PWZ1393) with the exception of the following sections.

Mark	Symbol & Description	Part No.			Remarks
		PWZ1393	PWZ1397	PWZ1398	
★★	IC5	LC7881-B	LC7881-C	LC7881-C	
★★	IC13	NJM78L12A	• • • • •	• • • • •	
★★	IC14	NJM79L12A	• • • • •	• • • • •	
★★	IC27	PD0026A	• • • • •	• • • • •	
★★	IC28	PD0034	• • • • •	PD0034	
⚠★★	IC30 – IC32	• • • • •	• • • • •	ICP-N10	
⚠★★	IC11	NJM7805FA	NJM78M05FA	NJM78M05FA	
⚠★★	IC12	NJM7905FA	NJM79M05FA	NJM79M05FA	
★★	IC24,IC25	M5218P	NJM4558DX	NJM4558DX	
★★	Q27	2SC1740S	• • • • •	• • • • •	
★★	Q18	2SA933S	• • • • •	• • • • •	
★	D1 – D4,D9	1SR139-100	• • • • •	• • • • •	
★	D11	MTZ27B (MTZ27C)	• • • • •	• • • • •	
★	D12	MTZ6.2B (MTZ6.2C)	• • • • •	• • • • •	
★	D17 – D19	• • • • •	1SS254	1SS254	
★	D25	2W02-5008-L	WL02-5004-L	WL02-5004-L	
	C59	CEAS330M16	• • • • •	CEAS330M16	
	C61	CFTXA103J50	CKCYF103Z50	CKCYF103Z50	
	C62	CEAS471M10	CEAS101M10	CEAS471M10	
	C81,C82	• • • • •	CCCCH300J50	• • • • •	
	C19,C60	CEAS101M50	CEAS330M16	CEAS330M16	
	C65	CEAS330M16	• • • • •	• • • • •	
	C87	CEAS101M50	• • • • •	• • • • •	
	C89,C90	CEAS220M50	• • • • •	• • • • •	
	C91,C141	• • • • •	CKCYF103Z50	CKCYF103Z50	
	C92	• • • • •	CCCSL101J50	CCCSL101J50	
	C95,C96	CCCCH270J50	• • • • •	CCCCH270J50	
	C104,C105	CEAS102M25	• • • • •	• • • • •	
	C106,C107	CEAS471M16	• • • • •	• • • • •	
	C115,C162	CKCYF103Z50	• • • • •	• • • • •	
	C116	CCCSL221J50	• • • • •	• • • • •	
	C118	• • • • •	CEAS220M50	CEAS220M50	
	C75,C76	CQMA561J50	CQMA471J50	CQMA471J50	
	C77,C78	CQMA681J50	CQMA821J50	CQMA821J50	
	C117	CEAS330M16	• • • • •	• • • • •	
	C121,C122	CQSA102J50	CQMA102K50	CQMA102K50	
	C131	CKCYF473Z50	CKCYF103Z50	CKCYF103Z50	
	C102,C103	CEAS102M16	CEAS471M10	CEAS471M10	
	R3,R5,R131,R132,R156 – R158	RD1/6PM102J	• • • • •	• • • • •	
	R69	RD1/6PM221J	• • • • •	RD1/6PM221J	
	R4,R6	RD1/6PM562J	RD1/6PM123J	RD1/6PM123J	
	R72	RD1/6PM222J	RD1/6PM152J	RD1/6PM152J	
	R78	• • • • •	RD1/6PM471J	RD1/6PM271J	
	R77	RD1/6PM222J	• • • • •	• • • • •	
	R117	• • • • •	RD1/6PM224J	RD1/6PM224J	
	R118	• • • • •	RD1/6PM102J	RD1/6PM102J	
	R119	RD1/6PM222J	• • • • •	• • • • •	
	R121	RD1/6PM472J	RD1/6PM362J	RD1/6PM362J	
	R97,R98	RD1/6PM752J	RD1/6PM822J	RD1/6PM822J	
	R101,R102	RD1/6PM752J	RD1/6PM472J	RD1/6PM472J	
	R109,R110	RD1/6PM103J	RD1/6PM822J	RD1/6PM822J	
	R130	RD1/6PM121J	• • • • •	RD1/6PM121J	
	R134	RD1/6PM391J	• • • • •	RD1/6PM391J	
	R159	• • • • •	RD1/6PM362J	RD1/6PM362J	
	R161	• • • • •	RD1/6PM391J	RD1/6PM391J	
★★	DL1,DL2 Delay line	PTF1012	• • • • •	• • • • •	
★	X2	• • • • •	PSS-012	• • • • •	
★	X3	PSS-012	• • • • •	PSS-012	
	JA3,JA4 Mini jack (CONTROL IN/OUT)	• • • • •	RKN1004	RKN1004	

Function Board Assembly (PWZ1408)

The function board assembly (PWZ1408) is the same as the function board assembly (PWZ1402) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		PWZ1402	PWZ1408	
★	D201 – D203	1SS254	• • • • •	
★★	S208 – S215,S219 – S221 Tact switch (TRACK No.0-9, TIME FADE, REPEAT)	PSG-065	• • • • •	
★	V201 Fluorescent indicator tube	PEL1021	PEL1022	
	Remote control sensor	SBX1483-11	• • • • •	

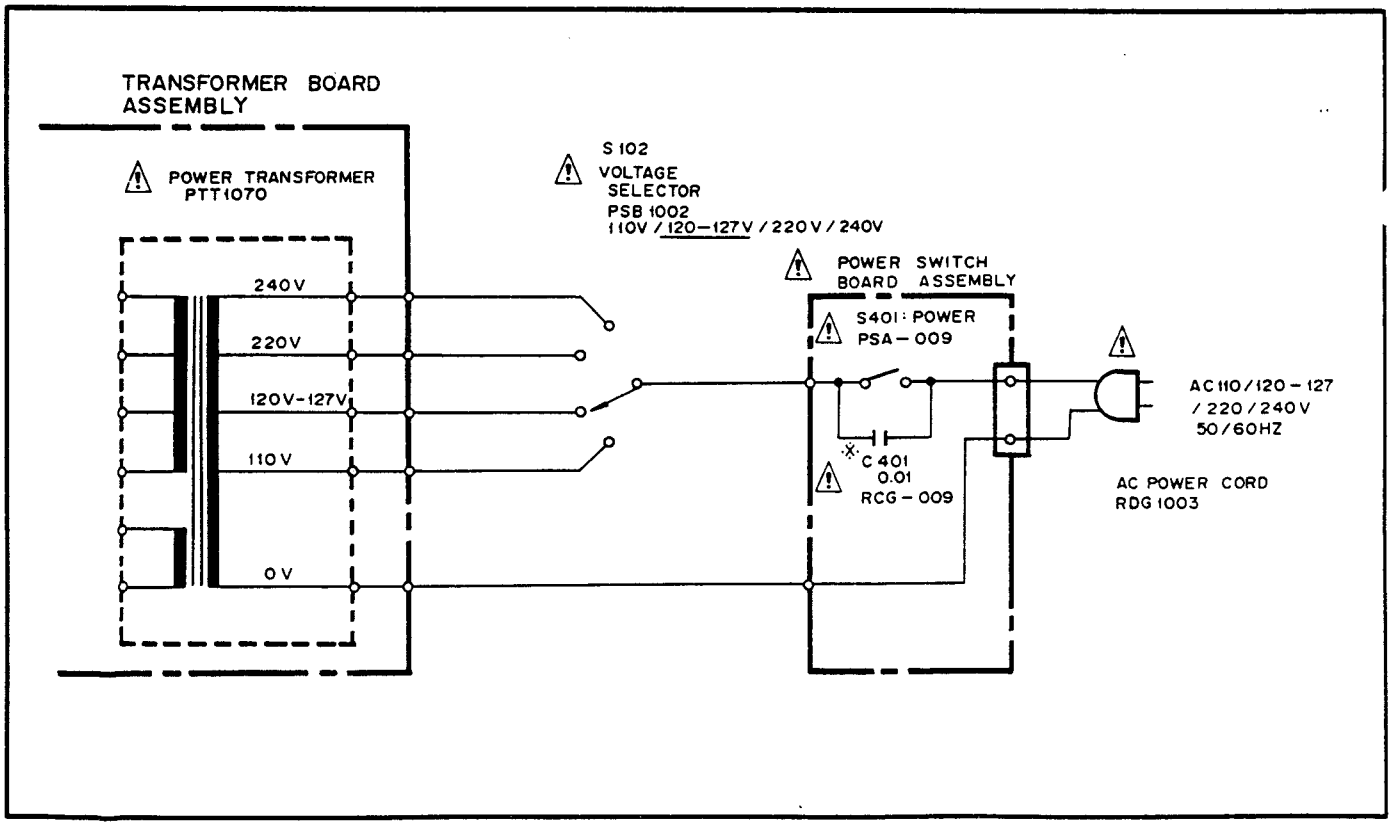
Transformer Board Assembly

The transformer board assembly (for PD–M400/HEM, SD and HP types) are the same as the Transformer board assembly (for PD–M500/KU type) with the exception of the following sections.

Mark	Symbol & Description	Part No.				Remarks
		PD–M500 /KU type	PD–M400 /HEM type	PD–M400 /SD type	PD–M400 /HP type	
	C308,C309	CKPYF103Z50	• • • • •	• • • • •	• • • •	

2.2 FOR PD–M400/SD TYPE

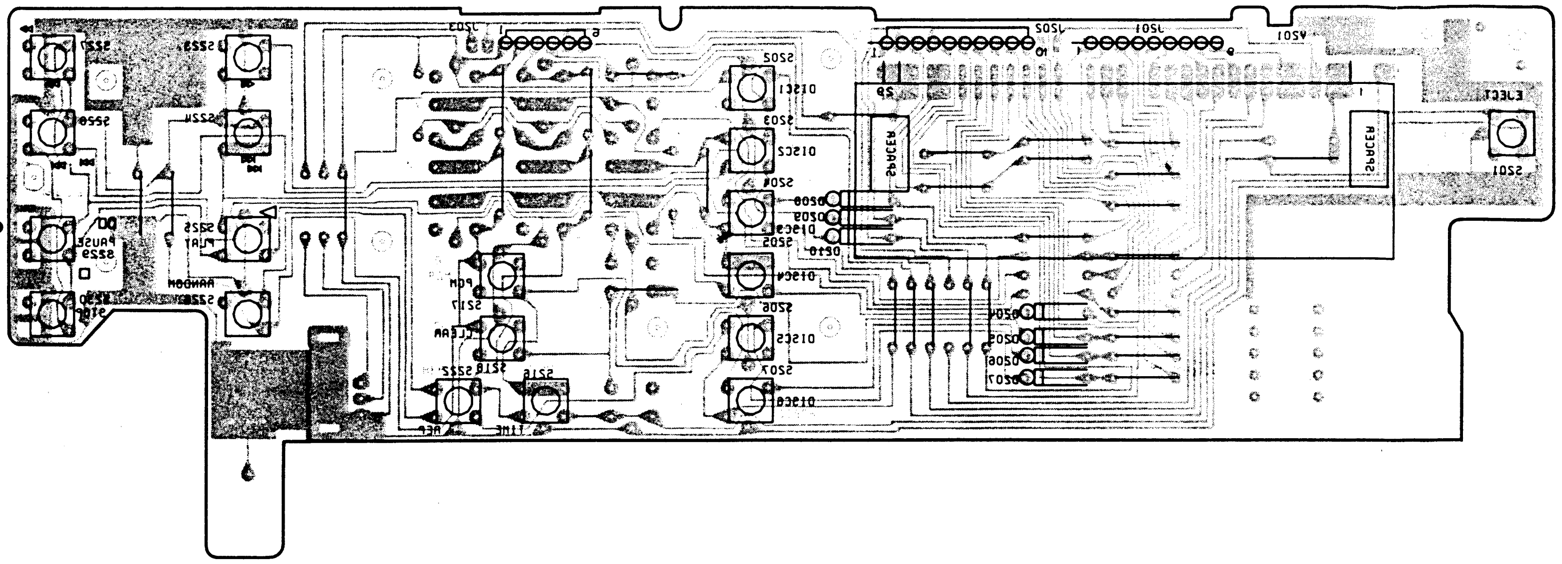
Note :The schematic diagram of PD–M400/SD type is the same as the PD–M400/KU and KC types with the exception of the power supply section. Refer to the service manual (ARP1520), PD–M500/KU, KC, PD–M400/KU and KC types.



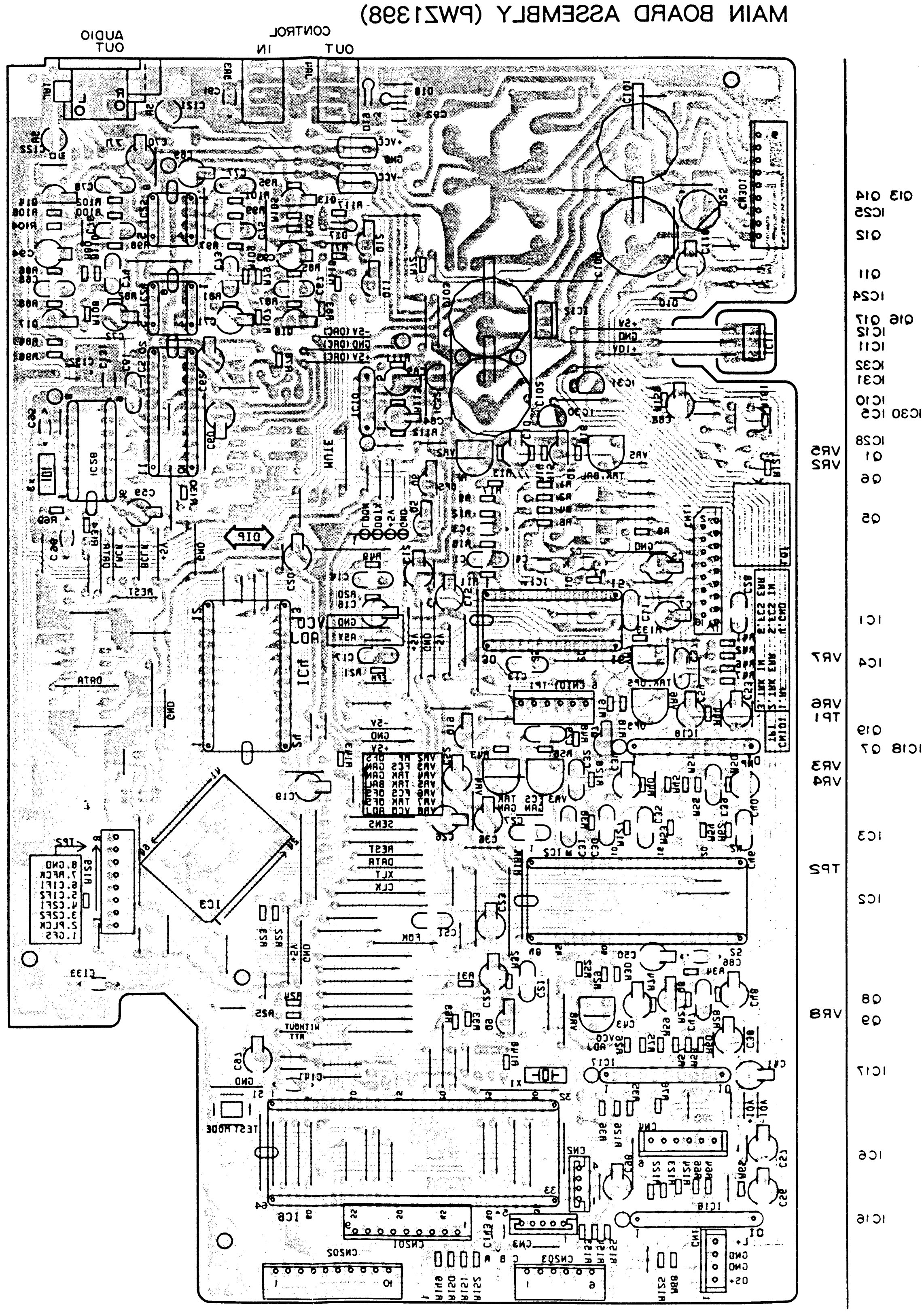
9 | 8 | 7 | 6 | 5 | 4

A

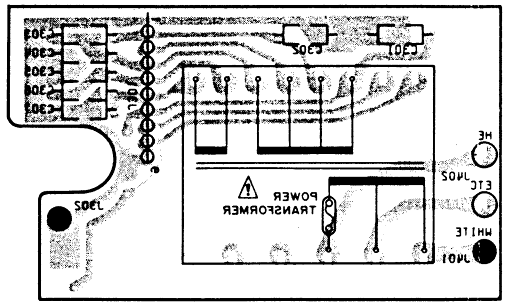
FUNCTION BOARD ASSEMBLY (PWZ1408)



MAIN BOARD ASSEMBLY (PWZ1398)

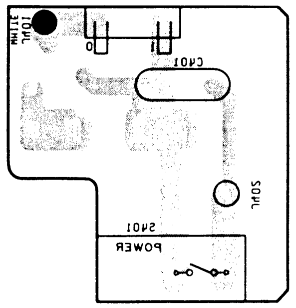


B



TRANSFORMER BOARD ASSEMBLY

C



D

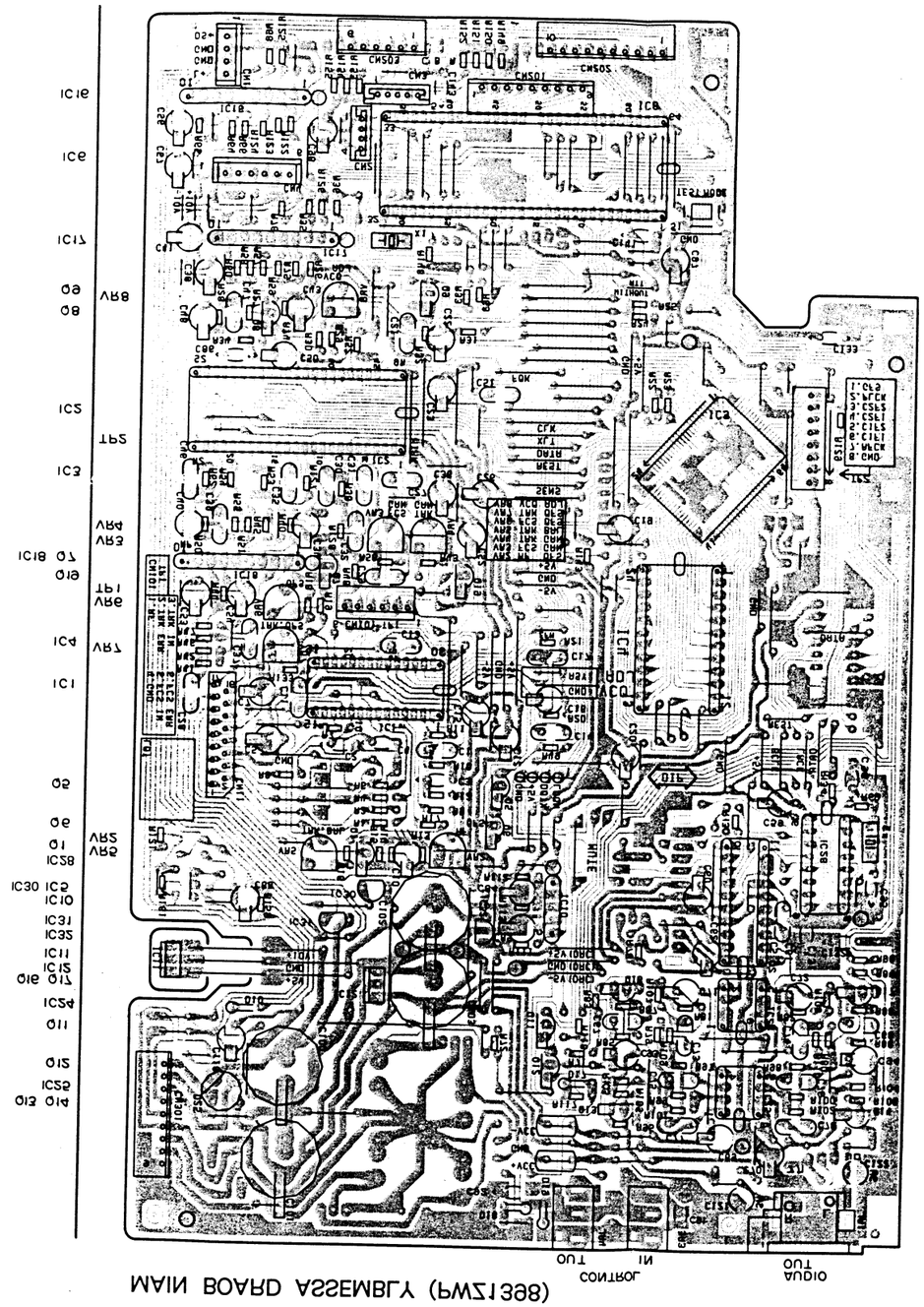
⚠POWER SWITCH BOARD ASSEMBLY

19

20

9 | 8 | 7 | 6 | 5 | 4

MAIN BOARD ASSEMBLY (PWZ1398)



FUNCTION B

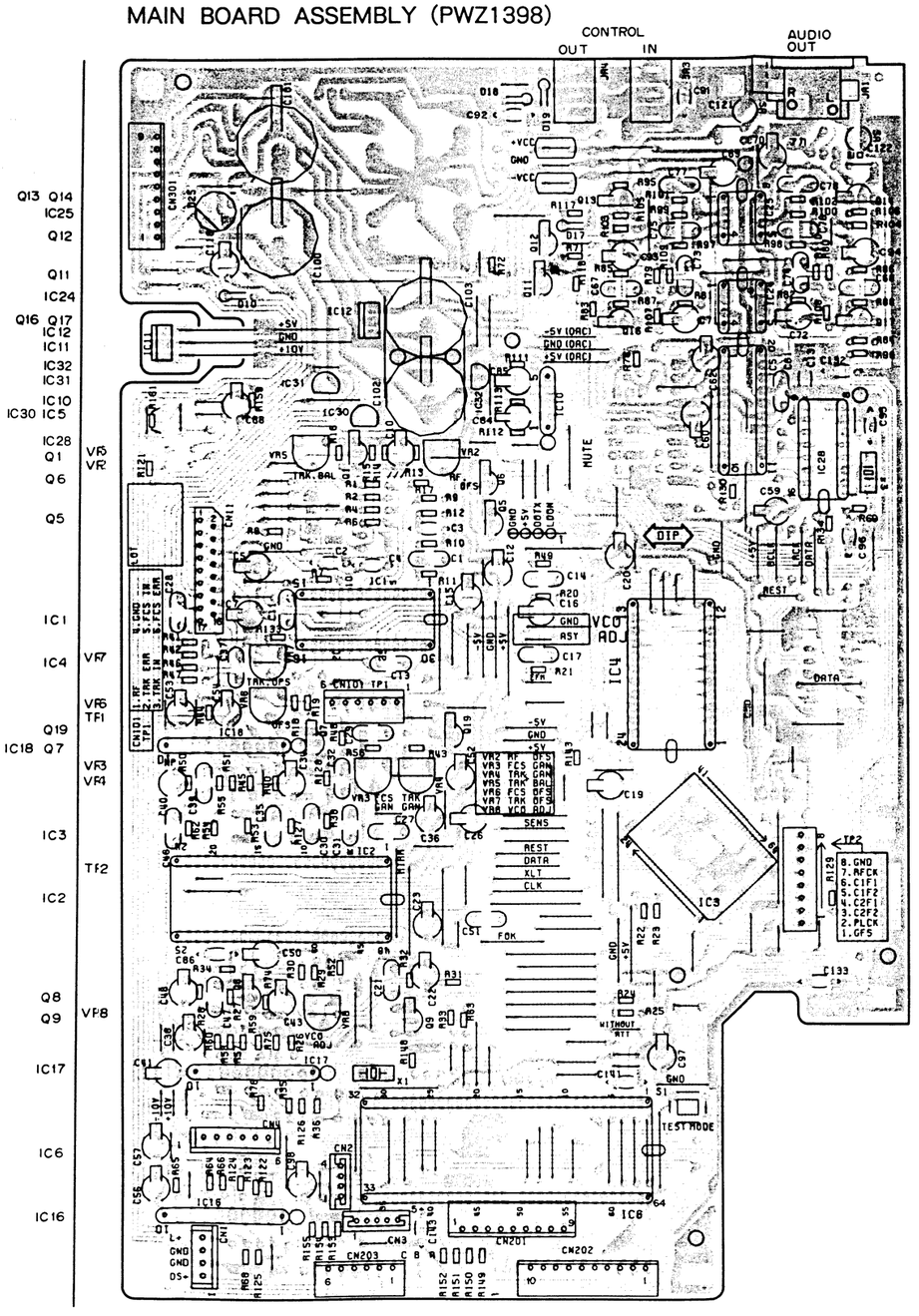
This P.C.B. connection diagram is viewed from the foil side.

2.3 P.C. BOARDS PATTERN

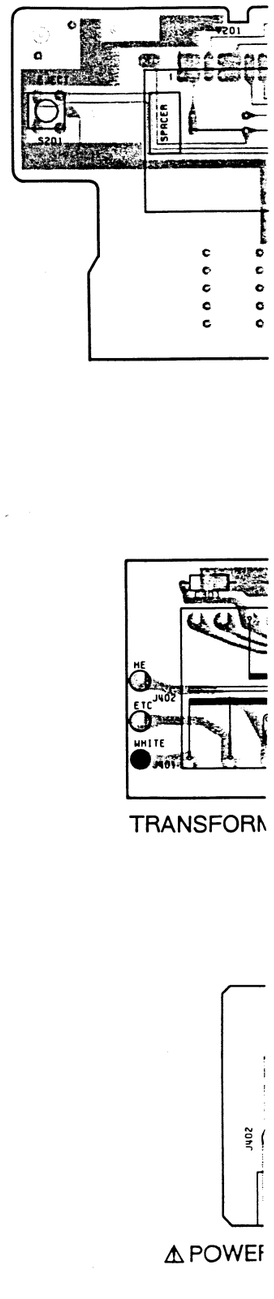
P.C.B. pattern diagram indication	Corresponding part symbol	Part name	P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor			Ceramic capacitor
					Mylar capacitor
		FET	SR		Styrol capacitor
			SF		
		Diode	NP		Electrolytic capacitor (Non polarized)
			NL		Electrolytic capacitor (Noiseless)
		Zenner diode			Electrolytic capacitor (Polarized)
		LED			Electrolytic capacitor (Polarized)
		Varactor			Power capacitor
		Tact switch			Semi-fixed resistor
		Inductor			Resistor array
					Resistor
		Coil	~		
		Transformer			Resonator
		Filter			

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

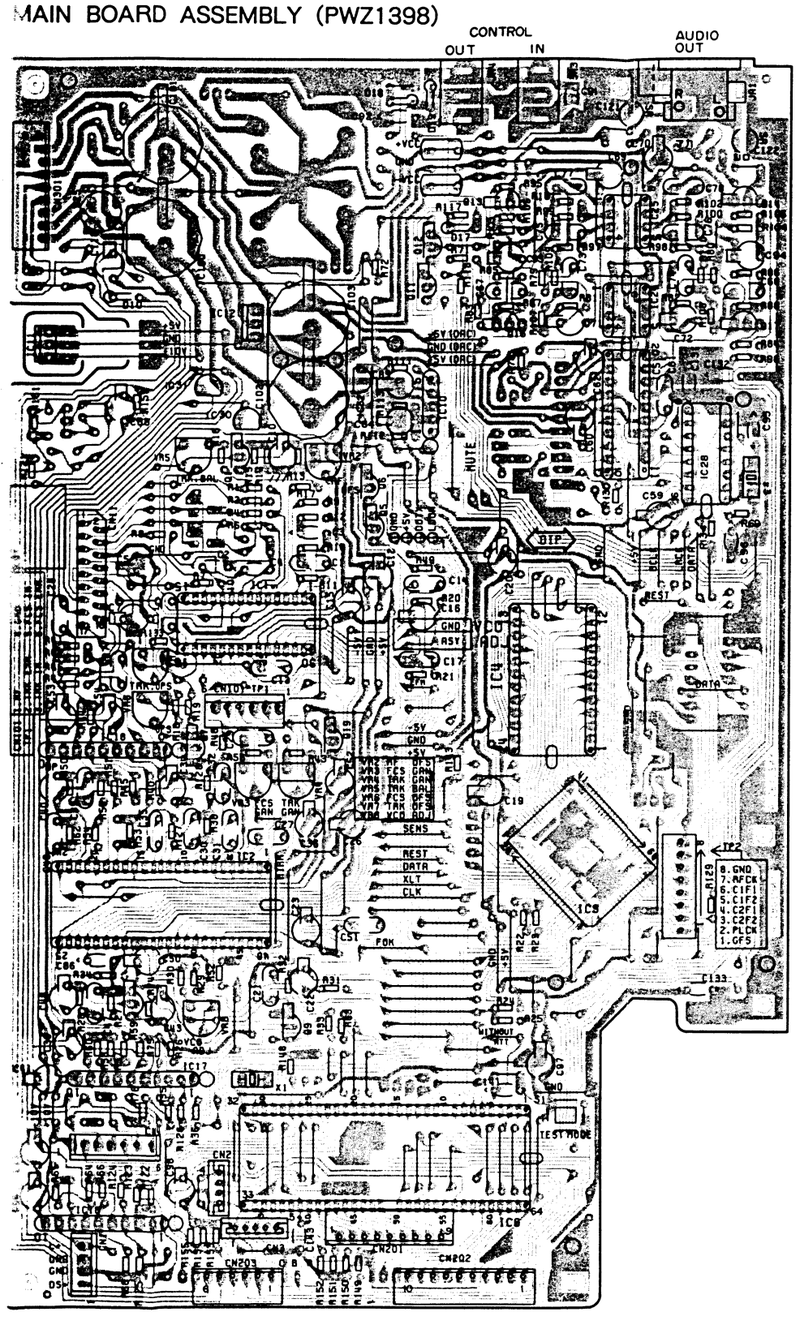
MAIN BOARD ASSEMBLY (PWZ1398)



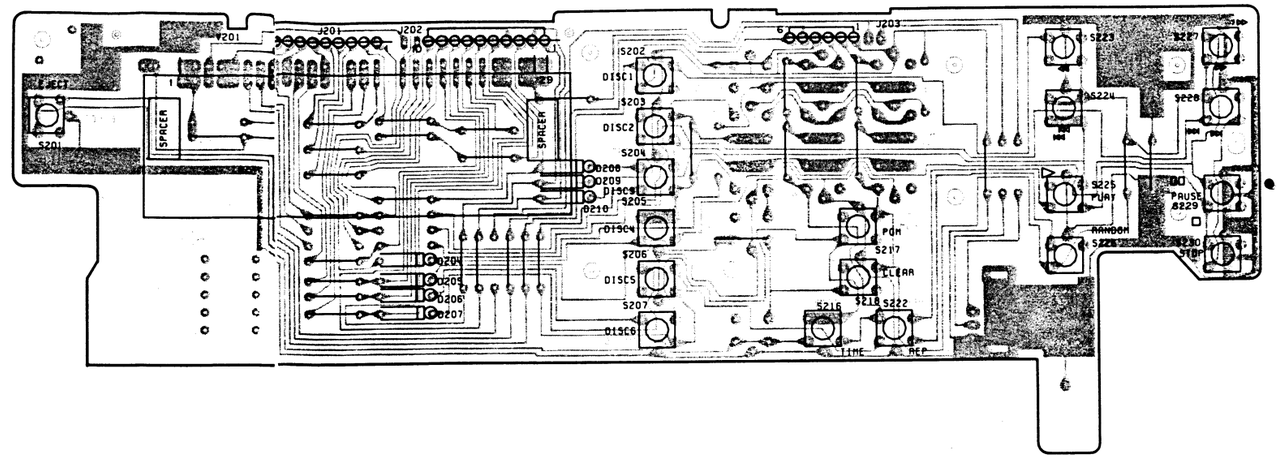
FUNCTION BOARD ASS

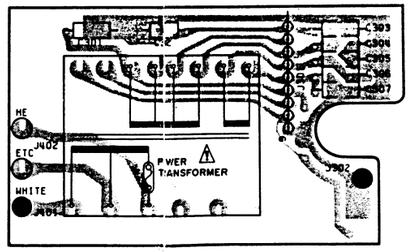


MAIN BOARD ASSEMBLY (PWZ1398)

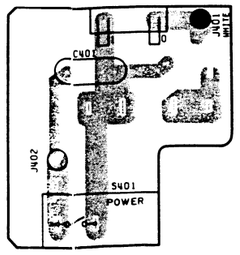


FUNCTION BOARD ASSEMBLY (PWZ1408)



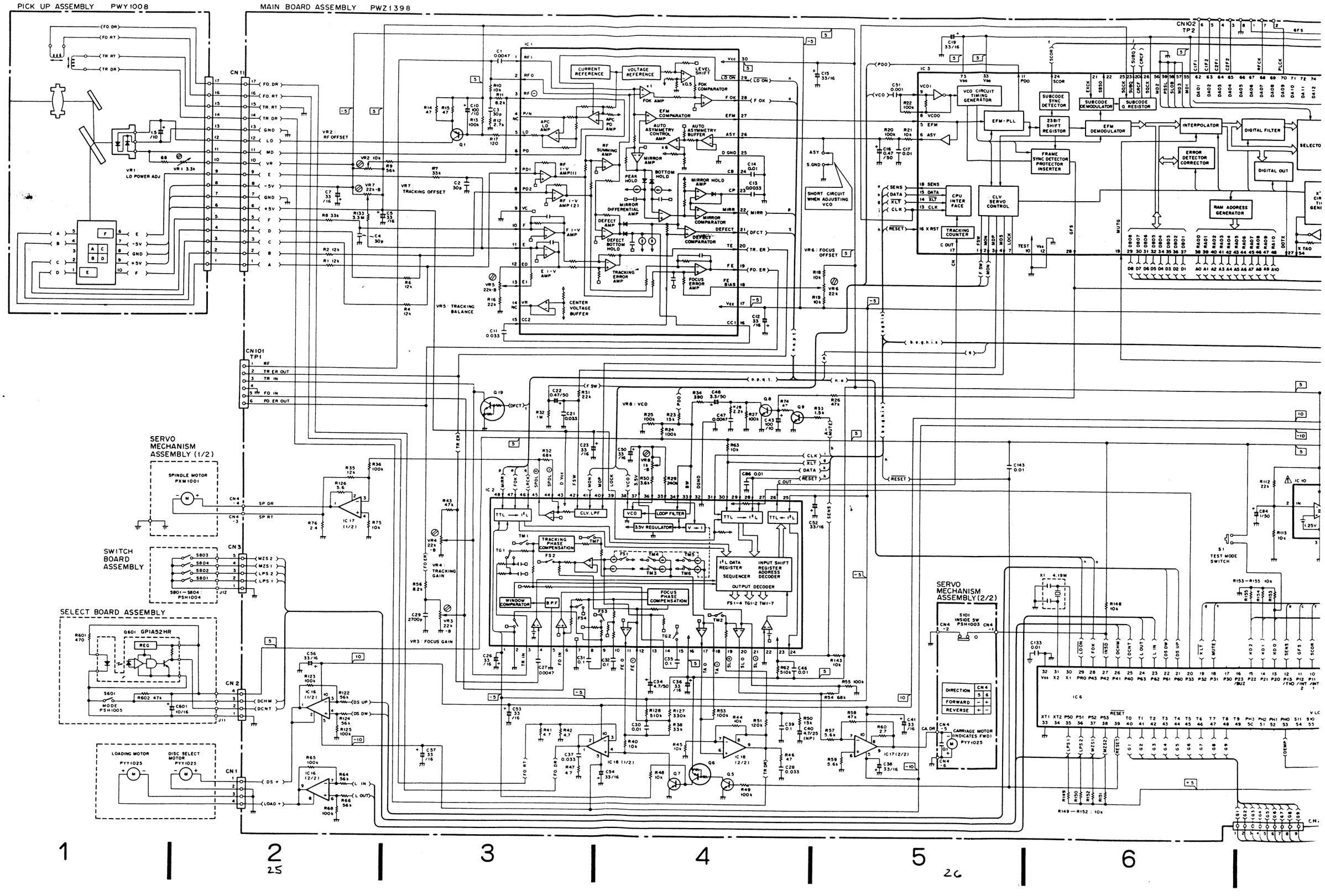


TRANSFORMER BOARD ASSEMBLY



⚠POWER SWITCH BOARD ASSEMBLY

2.4 SCHEMATIC DIAGRAM (For HEM type)


PICK UP ASSEMBLY PWY1008
MAIN BOARD ASSEMBLY PWZ1398
SERVO MECHANISM ASSEMBLY (1/2)
SWITCH BOARD ASSEMBLY
SELECT BOARD ASSEMBLY
SERVO MECHANISM ASSEMBLY(2/2)
CN11
CN101 TP1
CN102 TP2
IC 1
IC 2
IC 3
IC 6
VR1 LD POWER ADJ
VR2 : RF OFFSET
VR3 : FOCUS GAIN
VR4 : TRACKING GAIN
VR5 : TRACKING BALANCE
VR6 : FOCUS OFFSET
VR7 : TRACKING OFFSET
VR8 : VCO
SHORT CIRCUIT WHEN ADJUSTING VCO
S1 TEST MODE SWITCH
S101 INSIDE SW PSH1003
CARRIAGE MOTOR (INDICATES FWD)
PYY1025
SPINDLE MOTOR PXM1001
LOADING MOTOR PYY1025
DISC SELECT MOTOR PYY1025
MODE PSH1005
Q601 GP1A52HR
SERVO MECHANISM ASSEMBLY(1/2)
SERVO MECHANISM ASSEMBLY(2/2)
CURRENT REFERENCE
VOLTAGE REFERENCE
LEVEL SHIFT
FOK AMP
FOK COMPARATOR
EFM COMPARATOR
APC LD AMP
APC PD AMP
AUTO ASYMMETRY CONTROL AMP
AUTO ASYMMETRY BUFFER
RF SUMMING AMP
MIRROR AMP
PEAK HOLD
BOTTOM HOLD
MIRROR HOLD AMP
MIRROR DIFFERENTIAL AMP
MIRROR COMPARATOR
DEFECT AMP
DEFECT BOTTOM HOLD
DEFECT COMPARATOR
RF I-V AMP(1)
RF I-V AMP(2)
F I-V AMP
E I-V AMP
TRACKING ERROR AMP
FOCUS ERROR AMP
FE BIAS
CENTER VOLTAGE BUFFER
3.5V REGULATOR
V-I
CLV LPF
LOOP FILTER
VCO
TRACKING PHASE COMPENSATION
FOCUS PHASE COMPENSATION
WINDOW COMPARATOR
BPF
I²L DATA REGISTER SEQUENCER
INPUT SHIFT REGISTER ADDRESS DECODER
OUTPUT DECODER
VCO CIRCUIT TIMING GENERATOR
EFM-PLL
23BIT SHIFT REGISTOR
FRAME SYNC DETECTOR PROTECTOR INSERTER
SUBCODE SYNC DETECTOR
SUBCODE DEMODULATOR
SUBCODE Q RESISTOR
EFM DEMODULATOR
INTERPOLATOR
DIGITAL FILTER
DIGITAL OUT
ERROR DETECTOR CORRECTOR
RAM ADDRESS GENERATOR
CPU INTER FACE
CLV SERVO CONTROL
TRACKING COUNTER
DIRECTION
FORWARD
REVERSE
FO. DR
FO. RT
TR. RT
TR. DR
GND
LD
MD
VR
E
-5V
+5V
F
D
C
B
A
RF
TR ER OUT
TR IN
FO IN
FO ER OUT
DS +
LOAD +
L IN
L OUT
DS UP
DS DW
DCHM
DCNT
SP DR
SP RT
MZS 2
MZS 1
LPS 2
LPS 1
S803
S804
S802
S801
S801 – S804 PSH1004
J12
J11
J10
J9
J8
J7
J6
J5
J4
J3
J2
J1
SENS
DATA
XLT
CLK
RESET
16 X'TAL
C OUT
SCOR
SBSO
SFSO
EXCK
SCK
SUBQ
CRCF
SOCK
WD2
FSSL
SLOB
WD3
WD1
DA01
DA02
DA03
DA04
DA05
DA06
DA07
DA08
DA09
DA10
DA11
DA12
C1F1
C1F2
C2F1
C2F2
RFCK
PLCK
6fs
PDO
VCO
VCOO
EFM
ASY
S.GND
MUTE
TEST
LOCK
MON
MDP
MD3
MD2
MUTG
SENS
GFS
SCOR
XTAO
DOTX
DB08
DB07
DB06
DB05
DB04
DB03
DB02
DB01
RA00
RA01
RA02
RA03
RA04
RA05
RA06
RA07
RA08
RA09
RA10
D8 D7 D6 D5 D4 D3 D2 D1
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10
X1 4.19M
RESET
XT1 XT2 P50 P51 P52 P53 TO T1 T2 T3 T4 T5 T6 T7 T8 T9 PH3 PH2 PH1 PH0 S11 S10
LPS1 LPS2 MZS1 MZS2 RESET
R153 – R155 10k
R149 – R152 : 10k
1.25V
FE
TE
SE
TA0
DFCT
TR. ER
FO. ER
MIRR
DEFECT
CP
CB
D GND
D VCC
FSW
MON
MDP
LOCK
VCO
SPDL
FOK
MIRR
(LOCK)
TM1
TM2
TM3
TM4
TM5
TM6
TM7
TG1
TG2
FS1
FS2
FS3
FS4
SL0
SL0
SL1
SL1
CLV
CLK
XLT
DATA
RESET
C OUT
SENS
LD ON
F OK
EFM
ASY
D GND
CB
CP
MIRR
DEFECT
TE
FE
FE BIAS
Vcc
Vee
CC1
CC2
RF1
RF0
RF
P/N
NC
LD
PD
PD1
PD2
VC
E
E1
VR
NC
CC2
RF
F
E
EO
E1
VR
NC
CC2
TA0
FE
SE
TA1
SL0
SL0
SL1
SL1
TM1
TM2
TM3
TM4
TM5
TM6
TM7
TG1
TG2
FS1
FS2
FS3
FS4

Line Voltage Selection
(For HEM and HP types)

Line voltage can be changed with following steps.

1. Disconnect the AC Power cord.
2. Remove the Bonnet case.
3. Change the connection of the primary lead wires. (Connect as shown in Schematic Diagram)
4. Stick the line voltage label on the rear panel.

Description	Part No.
220V label	AAX-193
240V label	AAX-192

Note : Main board assembly (PWZ1397) of HP type is the same as the KU type. Refer to the service manual (ARP1520), PD-M500/KU, KC, PD-M400/KU and KC types.

MAIN BOARD ASSEMBLY

IC 1	CXA1081S
IC 2	CXA1082AS
IC 3	CXD1135QZ
IC 4	CXK5816PN-12L (CXK5816PN-15L) (LH5116-15)
IC5	LC7881-C
IC6	PD4150
IC10	M51957AL
IC11	NJM78M05FA
IC12	NJM79M05FA
IC16-IC18	TA8410K
IC24,25	NJM4558DX
IC28	PD0034
IC30-32	ICP-N10
Q1	2SA1399
Q5,8,9,16,17	2SC1740S
Q6,11	DTA124ES
Q7	2SA933S
Q12,19	DTC124ES
Q13,14	2SD1302
D10	1SR139-100
D17-19	1SS254
D25	WL02-5004-L
S1	PSG-064
VR2	VRTB6VS103
VR3-VR7	VRT B6VS223
VR8	VRTS6VS102
X1	VSS1014
X3	PSS-012

FUNCTION BOARD ASSEMBLY (PWZ1408)

V201 PEL1022
D204-D210
1SS254

S201-207, 216-218, S222-230
PSG-065

TRANSFORMER BOARD ASSEMBLY

POWER SWITCH BOARD ASSEMBLY